THE TOTAL UTILITY STANDARD OF DEFERRED PAYMENTS.

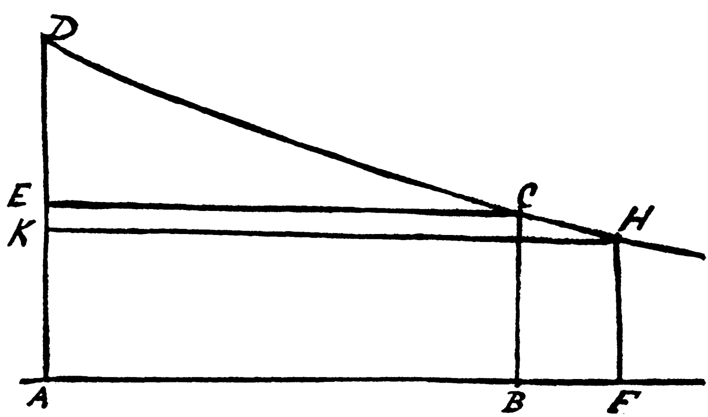
In a paper entitled "The Standard of Deferred Payments," published in the ANNALS for November, 1892, the writer inquired what course of prices will do justice to both parties to a time contract calling for a money payment. In the ANNALS for January, 1893, Dr. L. S. Merriam presented a thoughtful paper in which he criticised the conclusions of the first paper and gave grounds for reaching a very different result. It is now my purpose to re-open the question, and while accepting certain of his corrections, to advance reasons for adhering to my original position.

Stripped of the practical guise under which it first appeared to me the problem is simply this: At a certain date a man receives from another goods, or services, or power to buy them, and in return engages to pay at a future date a sum of money of present equivalence. During the interval there is an increase in the productiveness of human labor, and, consequently, in the abundance of goods. Determine now what should be the course of general prices in order that the contract may be kept without injustice to either debtor or creditor. The solution of this problem involves a quest for the just standard of deferred payments to which money in discharging this function should conform.

In my first paper two solutions were distinguished. The gold monometallists hold that the general price of labor should remain constant so that the debtor may return as much command over labor as he originally received. The bimetallists affirm that the general price level of commodities should remain constant so that the creditor should receive no more command over consumption goods than he originally loaned. It was held that these assertions involved

two controversies—one as to the ultimate standard of value, the other as to the proper destination of the benefits of industrial progress. The merits of both of these controversies were examined and weighed and the decision in both cases was against the monometallist. But the bimetallist contention was not entirely justified. It was held that the creditor is entitled to receive an amount of utility equal to that he originally parted with. And in view of the declining power of commodities to procure social satisfactions, owing to the rising scale of living, he should receive a certain excess of purchasing power. This requires a certain fall in prices much slighter, however, than that justified by the monometallists.

In his reply to this paper Dr. Merriam agrees with the writer in rejecting the labor standard of the monometallists and the commodity standard of the bimetallists. But he finds the simple utility standard likewise faulty and puts forward marginal utility as affording the only basis for a just and scientific standard of deferred payments. There are therefore four different standards in the field competing for the solution of the problem of deferred payments. Their relations may be seen at a glance by referring to this diagram :



Suppose the members of a community are able at a certain date to provide themselves by their industry with $A\ B$ of goods of which the utility scale is $D\ C$. Ten years later, owing to industrial progress, they are able with the same effort to provide themselves with $A\ F$ of goods of which the utility scale is $D\ H$. Population, mode of consumption, credit, frequency of exchange and rapidity of monetary circulation remaining the same, what ratio should exist between the money volumes and between the price levels of the two periods in order to secure justice to both debtor and creditor?

1. The *labor standard* advocates contend that as the wealth of the community, though more abundant, represents and hence commands no more labor than formerly, it should command no more money. The volume of money should be the same while prices should fall to $\frac{A\,B}{A\,F}$ of their former level.

2. The defenders of the *commodity standard* maintain that the volume of money should increase with the volume of goods so that the price level may remain the same and the relation of goods to money be undisturbed.

3. Dr. Merriam proposes the *marginal utility, or "total value" standard*, which requires that the volume of money should accurately reflect the change in total value from $A\ B\ C\ E$ to $A\ F\ H\ K$. Prices then would fall in correspondence with the sinking of marginal utility from $B\ C$ to $F\ H$.

4. The *total utility standard* proposed by the writer requires that the volume of money should reflect the change in total utility from $A\ B\ C\ D$ to $A\ F\ H\ D$. Prices should then fall in the ratio of $\frac{A\,B\,C\,D}{A\,B}$ to $\frac{A\,F\,H\,D}{A\,F}$.

These four standards are all that have yet been proposed. As Dr. Merriam and the writer agree in rejecting the first and second, this paper will be devoted to a comparison of the merits of the third and the fourth—the two that have

been brought to light in the course of the discussion. These agree in taking account of the *utility* of goods rather than of their *labor cost*, or of their *physical quantity*, as do the cruder popular theories. They differ, however, in their attitude toward utility, the one emphasizing *total value* founded on marginal utility, the other *total utility*.

The relation of his paper to my former paper needs a few words. Directed as it was against the false labor standard of the monometallists, my first paper was critical rather than constructive, and the standard roughly hewn out in the concluding pages is far from possessing definiteness, completeness and precision. The marginal utility doctrine was not sufficiently interrogated, and I am glad to own my debt to Dr. Merriam for the light he has thrown upon its relations to the theory of money. The statement that "A general decline in marginal utilities is as impossible as a general decline in values" was seen to be erroneous even before it appeared. I must ask moreover that in the statement that justice between debtor and creditor consists in "restoring equal values," the word "value" be not interpreted in the narrow sense of "market value." With these qualifications I am prepared to defend my former position and to justify on the theoretical side a standard substantially identical, as I conceive it, with that arrived at in the earlier paper. The argument will be developed in the course of a twofold analysis of value, the one part general, the other special.

The earlier thinkers sought in vain to root value in utility. Not noticing the declension of utility with increase of quantity they were puzzled by the low value of the so-called necessaries and the high value of the luxuries. Again, they found they might review the whole circle of consumers without finding "value in use," or utility, coinciding with market value. As the valuations of individuals seemed to stand at all levels above value but were rarely identical with it, it was held impossible to base value on utility. A thousand pianos

sold to-day will have a thousand different utilities. If the value of each is as its utility there should be a thousand different values; while there is in fact but one. Can you found one value on a thousand different utilities? Or if you select one utility, then which utility? Why that of *A* rather than that of *B*.

The doctrine of Satiable Wants and of the Declension of Utility shed a flood of light on the baffling phenomena of value. The eagerness to possess, or reluctance to forego, a unit of commodity was seen to be measured by its utility at the margin of use. The utility of a unit at the margin, then, became by imputation the value of each and every like unit in one's stock of goods. When men's valuation of a unit of good was thus shown to coincide with its utility at the margin of use, it became evident there was needed only the condition of variable quantity in order to explain the ancient paradox that superfluities are highly valued while necessaries are usually little esteemed.

Once the might of a marginal unit as fixer of subjective value came to light, it was inevitable that the principle should be applied to the problem of market value. When the market is analyzed we discover that Market Value is identical with the valuation of the buyer at a margin determined by the quantity of the commodity. As buyers of fully finished goods in final markets are usually consumers, the valuation that finally prevails is identical with the utility of the good to the consumers at the margin of consumption. The competition of consumers brings about a single margin of consumption which holds for all alike. The emergence of a margin of social consumption for an article does not mean that the marginal increment of one consumer yields him the same number of units of utility as that of every other consumer, but that the measure of a consumer's margin of utility divided by the utility to him of a unit of the medium of exchange is the same for all others. The market value of an increment of commodity is a cent, because its

utility at the margin of social consumption is a cent, which means in turn that each consumer buys clear down to the margin of social consumption, where another increment would yield him no more utility than a cent expended for some other article.

The marvel of the market is that the utility of the marginal increments determines not only their own value, but that of all other portions as well; so that all the exchanges take place at a ratio imposed by that portion which will supply the least intense want for that commodity. From this dominance of the margin arises legitimately the notion of a total value ascertained by multiplying the quantity of commodity by marginal utility. But this conception is very liable to be translated out of its proper sphere and put to illegitimate use. For reasons that will appear later it is frequently applied to all totals of good whatever, whereas, as I hope to show, it is true for goods in or for the market and for these alone. The scope of the total value concept merits attention seeing that in misuse of it lies, I believe, the error of the marginal utility standard.

An individual has five units of a good of which the respective utilities are 8, 5, 4, 2, 1. The true importance to him of the fifth unit is plainly 1 and, as the units are alike, each will be valued at 1. Total value then appears to be 5. But will he part with his whole stock for anything above five units of value? If he part with one unit for a breakfast, will he part with all for five successive breakfasts? If he part with one for a Saturday off, will he forego all for the sake of five Saturdays off? As it is impossible that he should hold the importance of all at only five times the value of a single unit, I conclude total value in the conventional sense can here be nothing but an empty abstraction. Or take a concrete instance. A Dakota farmer has provided ten cords of wood as his winter fuel. Heavy snows come and a less provident neighbor wishes to buy wood of him. He will part with a cord for $7. Will anyone say that the total

value of the stock of wood is therefore $70? Let him but offer $70 and see if he gets the wood.

Another test of the concept of total value is afforded by those goods which give off a number of distinct, concrete uses capable of independent valuation. A piano, *e. g.*, renders a multitude of musical services, some of which may be of such slight utility to the owner as to be given away. Will, therefore, the owner, seeing the marginal utility of the piano's services is zero, part with or rent the instrument for nothing? A well furnishes so much water that the owner lets the passers-by supply their wants from it. Are we, therefore, to conclude that the total value of the water supply, *i. e.*, the value of the well, is nothing, and that the owner will view with indifference its filling up or drying away? A house may be regarded as rendering an immense number of services of shelter. Now, because a certain vacant chamber may be used as store-room or lumber-room, are we to conceive the total value of the house as merely its total power to shelter old clothes, out-of-style furniture and general household rubbish?

Let us apply another test. In an isolated market a hundred boxes of peaches are offered. The utility of a box at the common margin of consumption resulting from the competition of the buyers is one dollar. The total value of the entire stock of peaches is therefore held to be $100. Now, total value is here a perfectly legitimate conception, seeing an outlay of $100 will actually cause the peaches to change hands. But suppose that the peaches have changed hands. What will now be the total value? The marginal utility is still one dollar, but will total value be $100? Evidently not. With the passage of the goods into the hands of the consumers the uniformity of value that characterizes the market disappears through the addition of unequal consumers' rents. The sum required to make the peaches change hands again is not $100, but a sum large enough to exceed their total utility in consumption, say $300. We can say that $100 is still their total

value, but if that sum will not buy them, this conception is here evidently an abstraction, corresponding to nothing real. And if $100 is still the total value of the peaches, what then shall we call this sum of $300, which alone can effect an exchange of the peaches? If it be demurred that the peaches could be rebought for $100 provided the consumers could replace them from other sources at the market price, I reply that this is in effect no sale at all, but a farcical exchange of peaches for peaches, which gives us merely the value of peaches in terms of peaches. So long as peaches are parted with not for peaches, but for unlike goods, consumers' valuations will be found very different from market value.

It appears then that, under our modern system of divided labor and production for sale, goods in the hands of the original producer, or any of the intermediaries that help to convey them to their destination in the final market, are valued not for their immediate usefulness, but for their power in exchange. They are esteemed not for their direct utility, but for their use in the market. But in the market it is irrefragably true that the valuation of the marginal unit determines the power in exchange of the entire lot. Although the seller may not submit his goods to the valuation of a particular market, nevertheless, as their only use to him is in exchange, he must value them by what he thinks they will fetch in some other market, or at some other time. So each seller values his goods by what they will bring, not in a particular market but in a normal market. Therefore, all goods *en route* to the consumer are valued at, and would be sold for, the value of the marginal unit in a normal market. For this stage in the history of goods, total value is a legitimate conception and has meaning.

But when goods are finally lodged in the hands of the consumer, the basis of valuation is changed. Formerly the valuation had reference to an external thing, viz., the market. Now, however, it strikes root in subjective experience. It relates not to power in exchange, but to use. Now, with the

supersession of market values by subjective values, the attempt to measure all value by the marginal unit becomes unscientific. And when the marginal good is no longer regulative that concept which makes total value the product of a quantity of goods by the value of the marginal unit, is no longer useful. However necessary elsewhere, it is in this field a mere abstraction, fit only to mislead. To make it the basis of any conclusion is to expose one's self to error and self-sophistication.

We have been showing that goods sold in isolated and temporary markets lose their uniform market values on passing into the hands of the consumers, and acquire a set of diverse subjective values. Now, as a matter of fact, the experience of real life does not seem to confirm this theory. There is no evidence of any sudden revolution of values when goods leave the final market. On the contrary, we find goods that have ended their career as merchantable commodities still valued at the market rate. And yet the doctrine of consumers' values given above must be true, seeing it rests on the theory of consumers' rent—a theory that has proved of greatest help in explaining the economc phenomena of real life. How are we to explain this paradox?

The supersession of market values by subjective values is delayed, or rather concealed, by the absence of one indispensable condition, viz., an "isolated market." With the appearance of permanent markets, with the flowing together of periodical demands into a steady and ever-renewed stream of demand, and the fusion of local and temporary supplies into a parallel stream of supply, the true subjective values do not come to light. The consumer can replace any good in his stock by purchase in the market at the market price. This circumstance obscures the great contrast between merchant's valuation and consumer's valuation. For if a quantity of commodity yielding a total utility of twenty can be readily replaced by parting with seven units of utility, its importance immediately ceases to be measured by its proper utility. As

the loss of it means only the cost of substitution, there is imputed to it the market value of its substitute. The possibility of unlimited resort to the market constitutes a connecting pipe, by which the value level of goods in the market is communicated to goods in the hands of the consumer. And as the growing extent, persistence, and accessibility of markets adds to the ease of replacement, the market valuation everywhere presses back and supplants private valuations until the whole field of wealth is overlaid by them. The web of imputed values hangs as a thick curtain before our eyes and hides from us the system of real values.

Never does the confusion of imputed values with real subjective values more fatally betray us than when we inquire the total value of the wealth of society. The line of inference is plausible. We see that in the presence of perennial markets the individual can always fill a gap in his stock by buying at the market price. The importance of a good to him is, therefore, not its positive utility but the value of its substitute, *i. e.*, market value. We see, moreover, that if the individual lose his whole stock of goods, he can replace at the current rate. Therefore the total value of the individual's stock is simply the product of quantity times the market value of a unit. As this can be proven true for each, it follows that the total value of each individual's possessions depends on the market rating. And as the total value of the wealth of society is simply the sum of the totals for individuals' possessions, it is inferred that it must likewise depend on the market value. And as market value is nothing more or less than the utility at the margin of social consumption, we reach Dr. Merriam's conclusion that "total value is equal to commodities measured by physical standards multiplied by the marginal utility of commodities. Commodities are the multiplicand, marginal utility is the multiplier." And once we poise our valuation of the wealth of society on the pivot offered by the utility of the marginal

unit there emerge of necessity the striking "paradoxes" of value—that maximum value does not coincide with greatest wealth, that total value may decline with growing abundance of goods, and that there is a point where the profusion of wealth is so great that value ceases altogether.*

There is an ancient and well-worn fallacy especially frequent in economic reasoning, which consists in assuming that what is true of one must be true of all. An individual observes that when he has twice as much money he is twice as well off; since what is true of each must be true of all, he infers that if the community had twice as much money it would be twice as well off. A pieceworker notices that an increase of diligence adds to his wages in like degree; on the same fallacious ground he reasons that if the working classes could double their efficiency they would double their income. An investor sees that his income from investments varies directly with his capital, and concludes that the advantage society reaps from capital varies directly with its amount. A landowner observes that his rent increases with the yield of his land, and infers that the share of the landlord class will increase with the productiveness of the soil. An individual producer finds his prosperity furthered by the exclusion of competing foreign goods, and arrives at the proposition that the prosperity of a society will be increased by the exclusion of all goods that compete with the products of any home producer.

* Suppose in a society in which "total value" has passed its maximum and reached steady down-grade a great corporation borrows for a fifty-year term a vast sum representing say more than one-third of the total value of all the wealth of society. Now suppose that, during this period, owing to unexampled progress, abundance and decline of marginal utilities "total value" shrinks to one-third of its former self. If value were interpreted as Dr. Merriam suggests the following paradoxical consequences would appear. First.—It would be impossible for the corporation to pay the debt even if it acquired and paid over to its creditors all the wealth extant. (2) With infinite industry for infinite time with infinite success it would be unable to produce enough value to cancel the debt. (3) With every step toward extinction the apparent weight of the remainder of the debt will increase until at last the difficulty of discharging the remaining portion will appear greater than the difficulty of discharging the debt if no part whatever had been paid. Can a doctrine so fruitful of paradoxes be sound?

Now in each of these cases the identification of the consequence to the individual with the consequence to society has proved a snare to the reasoner. A like fate awaits those who from the values imputed by individuals to their goods attempt to reach the value of the total wealth of society. The individual has the power of replacing his stock at the market rate, and it is therefore concluded that society can replace *its* stock at the same rate. And with equal ease of substitution market values must supplant subjective values as effectively in the valuation of social wealth as in the valuation of individual wealth. Now it is not at all true that society enjoys the same facility of substitution as does the individual: on the contrary society cannot substitute at all. Granted the individual can replace his stock at the market price, it does not follow that a considerable group of consumers can replace their stocks at the same price. The inevitable effect of a large reinforcement to current demand is a rise in market value and consequently a greater imputation of value to the goods in question. The sum of values of society's wealth taken group-wise would therefore be greater than when taken individually. Enlarge the group and the disturbance of market values in the process of substitution would be still more marked. Another rise in "total value" would take place showing conclusively the unsoundness of a method of valuation that reaches such different totals for the same body of wealth. Finally, suppose society as a whole to lose its stock of goods. In this case replacement is utterly out of the question. The goods in the markets embraced within society are of course swept away with the rest. Markets cease because there is nothing to exchange, and with them vanish all market valuations. Substitution being no longer possible there is an end to measuring the value of a good by the value of its substitute. No longer stamped with an alien utility each acquires an importance proportionate to the satisfaction that was dependent on it. The conventional valuations of the market give

way to the natural valuations of the consumer. The system of imputed values falls away and unmasks the true subjective values that express the significance of goods to their user or consumer.

The tyranny of the margin has been felt before this even in the valuation of a single species of wealth. Men have at times doubted if the fall of a penny per ounce in the London price of silver struck at once eighty millions from the value of the silver on the globe, and have marveled that a dispatch, a rumor or a committee report should be able in a day to restore this stupendous quantity of value. Men have wondered if the momentary and manipulated ups and downs of wheat, cotton, or copper, in the central ruling exchanges were to be carried back and applied to the world's stock of wheat, cotton, or copper. To do this were too much like reading the ocean's rise and fall in the swelling and sinking of the waves on the beach. But in none of these cases does the use of the margin as the standard of measurement result in such paradoxes and pseudo-conceptions as in the valuation of the wealth of society. It is the height of bad logic to ascertain the total value of society's stock by destroying in fancy successive portions of it and measuring the losses by the expense of replacing the first portion destroyed. The quest for true value requires a more unitary treatment. Just as in the case of the piano, the well, or the house, the value of a good representing a number of distinguishable services is related not to the marginal utility of these services but to their total utility, so the total value of the community's wealth rests not on marginal but on real utility, and is not distinguishable from the total sum of utilities. This conception alone is in harmony with the deliverances of common sense. Value in the sense of importance to well-being the wealth of society certainly has. And it is plain that the larger wealth, conditioning as it does the greater measure of well-being, has the greater, though perhaps not a proportionately greater,

value. Furthermore, it is clear that the millennial abundance that should permit all wants to be satisfied, would condition the greater measure of well-being, and therefore possess the greater value.

Recurring now to the diagram on page 90, it is evident that the total value of the original wealth of the community is measured not by Area *A B C E*, but by Area *A B C D*. Likewise at the close of ten years total value is not *A F H K* but *A F H D*. If now the money of the community is to reflect or mirror total value, it must increase during the period of expansion in the ratio of *A F H D* to *A B C D*, which is in effect to adopt the total utility standard instead of the marginal utility standard proposed by Dr. Merriam. Such is the conclusion from the general analysis of value.

Addressing ourselves now to the concrete question of fairness between debtor and creditor a like conclusion seems to emerge. Of course a standard just to all debtors and creditors is Utopian. The utmost we can hope for is one that shall do justice in the normal or average case. Now, such a standard is not attained when we compel prices to sink with marginal utilities. It is true that the money a debtor pays to his creditor *may* go to provide the latter with marginal utilities: it *may* be expended at the margin of consumption. But it *need* not be for there are other utilities. If marginal utility were all that a debtor could hope to place in command of his creditor, it would be just to bind prices to marginal utility, and to cause equal sums of money at all times to buy equal quantities of marginal utility. But, as a matter-of-fact, any particular sum is far more likely to be expended for intra-marginal utilities. The daily rejuvenation of the gaping clamorous brood of wants compels the creditor to provide for his necessity as well as for his comfort and enjoyment, to procure that which is necessary as well as that which is convenient merely or even superfluous. He cannot reach his margin of consumption until he has experienced a series of intra-marginal utilities.

A sane man receiving his year's income in five equal payments on the first day of January does not regard the fifth payment as available only for supplying him with utilities at his margin of use. Nor does he upbraid the fifth payer for returning less value than the others because, forsooth, that payment conditions only the slender utilities at the rim of his consumption. Likewise the payment of a debtor, though it but adds to a large assured income, should not be looked upon as expended solely for marginal utilities, but as devoted to procuring all sorts of utilities. All equal parts of a man's income must be held to contribute equally to their joint result, and a given portion must be esteemed not for its command over marginal utility but for its power to contribute to Total Utility. An example will make this clear. Suppose that for the average creditor an income of 100 units of commodity conditions a total utility of 1000. The importance then of a single unspecified unit will be ten. If now, added commodity increases total utility but slightly, so that an income of 120 conditions a total utility of only 1080, the importance of an unspecified unit will sink to nine. From this point of view a man who borrowed when incomes were 100 and restores the same quantity of commodity when incomes had risen to 120, may justly be accused of repaying less value. Yet this would be the nature of the transaction if the commodity standard prevailed and prices were not suffered to fall. The total utility standard on the other hand would require that the debtor return one and one-ninth units of commodity for every unit borrowed. Prices should, therefore, fall in just such measure as the power of an unspecified portion of goods to contribute to total utility has fallen. The relation of this to the third standard, will appear if we suppose that when incomes are 100 the marginal unit of goods adds eight units of utility while, when incomes are 120, it adds only two. According to the marginal utility standard the creditor should receive four times as much commodity as he lent. To realize this in money contracts would

require that prices fall to one-fourth of their former level. Such a requirement seems to me unsound in theory and unjust in practice.

The artificiality and arbitrariness of the marginal utility standard of value clearly appears in the statement of Dr. Merriam: "The permanent control of the same amount of value ensures that economically a man shall at all times be in the same position relatively to other men. This position will be kept, not in respect to social esteem merely, but in all respects." This view, that the creditor, if he is to receive the same value, must be kept in the same position relatively to other men, seems to imply that the sole importance of goods is to enable one to keep up with one's neighbors. Is this true to life? Regarding consumption in the midst of society, three notions are held. Some hold the individual and absolute satisfaction derived from goods to be everything; the social and relative importance to be nothing. The above-quoted statement implies that the social and relative is everything; the individual and absolute nothing. The best analysis of the facts shows, I believe, that the total well-being we derive from goods depends partly on the positive satisfaction experienced in use or consumption and partly on the social satisfactions that flow to us in consequence, the latter largely determined by the relation of our consumption to that of our neighbors. The fact that some "go in" for comfort and care nothing for "appearances," while others skimp in the household in order to be lavish in externals, shows the difference in estimate of these two elements of well-being. I, therefore, hold that, while due allowance must be made for the social aspect of consumption, we do not need to keep up a man's position relatively to other men in order that his control over value shall at all times be the same.

The result of the special analysis of value confirms the conclusion from the general analysis that *total utility, and not "total value" based on marginal utility, is the scientific*

standard to which money should conform in order to do justice as a standard of deferred payments.

It is manifest that this standard would justify for the community described in the earlier part of this paper, a larger volume of money and a higher range of prices than would be justified either by the labor standard or by the marginal utility standard. As the United States is a community characterized by industrial progress, the principles of value set forth in this paper, must prove decidedly more favorable to the bimetallists' contention and more repugnant to the gold standard than the conceptions and arguments that support the labor standard or the marginal utility standard.

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